UNIVERSITY OF WASHINGTON

ARBORETUM BULLETIN

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PRESIDENT'S MESSAGE

In the Winter Issue of the BULLETIN I made reference to advertising and advertising revenue as it relates to our publication. In the very near future we will have a new revised rate schedule for advertising. In this connection, as members of the Foundation and subscribers, we invite you to submit names of prospective advertisers to the Foundation office and we ask you to support our advertisers who are supporting the Foundation.

At long last a gift from the Foundation to the enrichment of the Arboretum in the name of the late Mrs. Emma Stimson will come to fruition. I am assured by University officials that the Emma Stimson Memorial Gates will be built and installed in the south entrance to the upper Arboretum Drive this Spring.

I wish I could report similar progress on the long awaited Floral Hall and Office Building for the Arboretum. Working drawings and specifications are complete and the building could be submitted for bid, however, largely due to the passage of time since the building was conceived, the architects estimate of cost together with the other reliable costing sources place the project out of reach of available funds. Increased costs of building have spiraled upward to a point where available funds and audited estimates are out of balance in excess of $600,000. We have all worked long and hard for this vital and important addition to the Arboretum. I have personally urged the proper University officials to seek a solution to the problem which would take the form of an alternate plan or a cutback in the plans and specifications of the proposed building as designed. At this writing a solution is not within our grasp but I hold some hope that an answer to the problem will be reached.

Elsewhere in this issue of the BULLETIN you will find the Unit Council's Annual Plant Sale featured. Please write the dates on your calendar – Thursday, Friday, April 29 and 30 and plan to attend. Work and Fun Day, an Annual Unit Council Arboretum Beautification event, is scheduled for Wednesday April 14th. THE MORE THE MERRIER!!!

Robert J. Behnke
President

THE ARBORETUM BULLETIN
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Seattle, Wn. Spring, 1971

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The ARBORETUM BULLETIN is a journal of general horticultural information published quarterly by the University of Washington Arboretum Foundation as a bonus of membership. Information regarding membership in the Foundation may be obtained by writing to the Arboretum Foundation University of Washington, 98105 or by calling EA 5-4510.

The ARBORETUM BULLETIN is published for the intelligent layman who has an interest in plants and the Arboretum. It attempts to inform our members and the general public of important happenings in the Arboretum, of recent acquisitions and of new developments. Articles on botany and horticulturally related subjects written in a non-technical but scientifically correct manner by professional and amateur botanists, horticulturists, educators and gardeners are welcomed.

THE UNIVERSITY OF WASHINGTON

Arboretum bulletin

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COVER PHOTO: R. *chrysanthum* x R. *degronianum*
Photo by: B. O. Mulligan

R. Avril (R. *imperator* X R. *ciliatum*), hybridized by Mr. Mulligan in 1955 and named in 1965. Photo: B. O. Mulligan

Rhododendron Hybridizing in the Arboretum

*J. A. WITT**

The history of hybridizing rhododendrons in the Arboretum, as one might expect, dates back near to its beginning. *The Arboretum Bulletin* for June 1939, informs us that Dr. J. H. Hanley had students in one of his classes make some 250 crosses. Unfortunately a complete record of this work does not exist although there are a number of large plants now growing in the rhododendron collections that must represent the results of the classes' hybridizing. These plants are largely without labels and few, if any, can compare with hybrids now available to the gardener, so it is very unlikely that any will be named or introduced. However, as a group they make a charming display, and while some have been and others doubtlessly will be discarded, the remainder in the large rhododendron bed west of the magnolia section represent an interesting and colorful bit of early Arboretum history.

The first rhododendron hybrid produced in the Arboretum to be named came some fifteen years after Dr. Hanley's work. This is Mr. B. O. Mulligan's cross of *R. leucaspis* X *R. mucronulatum,* called 'Seattle Springtime' and registered in 1954. It is an early flowering, semi-evergreen

*Mr. Witt, Assistant Director of the Arboretum, writes our popular column "The Arboretum Answers" and is always gracious and helpful in obtaining copy and photographs.

dwarf (the original plant is now less than 3 feet tall) that normally flowers by mild February or early March. Its pale opalescent pink flowers are about an inch and one half across in clusters of two to five at the ends of the branches.

The next rhododendrons to be named were not planned crosses, but were selections of seedlings raised in the Arboretum. The first, 'Mrs. A. F. McEwan', is a selected form of a 'Loderi' seedling which has 3-inch pink to rose trumpet-shaped flowers in May. It is the only plant so far named of a group of rhododendrons raised from *R.* 'Loderi' seed given to the Arboretum by Mr. Herbert Ihrig in 1940. These now are large plants growing in Loderi Valley and others may be named in the future. The second, 'Gene' was named in 1961 to honor Miss Gene Webb, then Executive Secretary of the Arboretum Foundation. It was raised from seed of *R. spiciferum* received from the Royal Botanic Garden, Edinburgh, Scotland, in 1944. One plant from this seed was obviously crossed with another species, probably *R. ciliatum,* and was considered different enough from existing hybrids to name and distribute. 'Gene' is a semi-dwarf rhododendron, ultimately reaching three feet or so with compact trusses of cylamen purple flowers in early May. It bears considerable resemblance to 'Racil' and flowers about the same time.

The three latest rhododendron hybrids named in the Arboretum were the products of planned hybridizing. In 1955 Mr. Mulligan crossed *R. imperator* with *R. ciliatum;* one seedling was named "Avril' in 1965. It is a compact low and spreading shrub which covers itself with rose-pink tubular flowers in April. A cross made by the author in 1957 produced two interesting low growing plants that represent second generation Arboretum hybrids. These are *R.* 'Yellow Wolf' named in 1966 and *R.* 'Chief Joseph' published in 1968. These sibling hybrids are a cross between a *Rhododendron scyphocalyx* hybrid and a complex hybrid, *R. chrysanthum* X ('Rubina' X 'Fabia') made by Mr. Mulligan in 1952. *Rhododendron* 'Yellow Wolf' has flowers of orange buff stained peach in a flat-topped truss. Unfortunately, it received a severe shock by being moved before it was propagated and has not

R. Seattle Springtime (R. *leucaspis* X R. *mucronulatum*), an earlier cross by Mr. Mulligan registered in 1954. Photo: B. O. Mulligan

made a good recovery, so only one plant now exists. Its pollen has been widely distributed, however, and we now have hope that the plant will recover enough to be propagated.

'Chief Joseph' is also a low spreading plant with flowers of reddish purple on the outside and orange red inside; its normal flowering period is mid May, but it has a tendency to flower in the fall as well. It is being propagated and may be ready for distribution before too long.

Many other Arboretum hybrids are currently being tested, and perhaps there will be one or more different enough to name and introduce. Among the more promising are a series of dwarf plants with a range of cream to pink flowers that appear in early April, *R. chyrsanthum* X *R. degronianum.* Much taller growing are plants of 'Dr. Stocker' X 'Robin Hood' that include several with a deep maroon blotch in the base of large, frilled funnel-shaped pink flowers.

Many more are waiting in the wings, so to speak, plants that have only just begun to flower, that have yet to bloom and even more which are still in the tiny seedling stage.

While the hybridizing done in the Arboretum is not really following a long term program nor is it on a very large scale, we are tending to use those hybrids, named or not, that were developed here and some of the more recent seedlings are third generation Arboretum plants.

Surely among these there will be that real winner, that *'ne plus ultra'* of rhododendrons which is the hope of every hybridizer. Well, we can dream anyway; that's half the fun of hybridizing. ▲

R. Gene (R. *scabrifolium* hybrid), a seedling raised in the Arboretum and named in 1961 to honor Miss Gene Webb. Photo: William Eng

Hybridizing Rhododendrons For Plant Habit

*CECIL SMITH**

My main effort in hybridizing rhododendrons has been to produce semi-dwarfs with good foliage and a sturdy plant habit. One reason for this objective is that more small plants can be grown in a given space. A group of one hundred seedlings can be taken from the flat and spaced six inches apart, thus taking up a space of twenty-five square feet. These may be left for two years. Then at least that half which has poorer foliage can be eliminated. The remaining better plants can be re-arranged in the same area and perhaps left until they bloom by doing some more weeding out. Thus a selection may be made by the use of twenty-five square feet. If the cross produced a better than average group of plants, more space would be required, which should not be objectionable.

Another good reason for breeding for sturdy semi-dwarfs in the elepidote group is that there are so few of them, as compared to the medium to large growing ones. It would appear to me that there is much more room for improvement here than in working for larger blooms.

A sturdy plant will hold the blooms upright in the rain, which is more than can be said of a great proportion of those we now have. The chances of breaking down in heavy snow are remote, which is not the case with large growing rhododendrons.

Another big plus for the sturdy plant is that it will not, after ten or fifteen years, bend over and leave a hollow space in the middle, as do so many of the medium to faster growers.

To produce good foliage should be a primary goal of the hybridizer. It is to be seen for twelve months as compared to two to four weeks for the bloom. I like to see the leaves have uniform color without spots. Some spottiness is caused by sucking insects and some, they say, by soil deficiencies. I have never been able to overcome the light shading along the veins of the leaves by soil amendments. A sure way to prevent irregular shades of green in the leaves may be to select parents without these defects. Also, it would appear that some species and hybrids are more susceptible to foliage injury by insects than others.

A leaf which is recurved or turned down around the edges will often keep its shape better than one not recurved. A plant with glossy leaves is especially attractive in wet weather in the winter when the garden is in the least attractive season.

Another characteristic that I look for when selecting a parent is the number of years that the leaves will stay on the plant. This ability to retain the leaves varies from a little over a year to as much as eleven years. A minimum of two sets of leaves is desirable, and in a cross, a plant with three sets will be more attractive than the one with two sets, other qualities being equal.

Indumentum may not be valued highly by a person who observes rhododendrons chiefly in the blooming stage, but the attractiveness of the new growths on an indumented plant may be as great and last over a longer period of time than will the bloom. Unfortunately, in order to retain an attractive indumentum, at least one parent has to be abundantly indumented, and the other needs at least a trace, as has

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*In 1967, Mr. Smith, Aurora, Oregon, received the Gold Medal, highest award of the American Rhododendron Society, as well as in his own Chapter, Portland. His riverside, woodland garden is one of the finest rhododendron gardens in the northwest. He has generously shared both his knowledge and the pollen from his choice plants. He started hybridizing in 1951 and the results of his labor have been bringing him growing recognition during the last four years.

R. *calophytum.* This generally recessive characteristic can be quite a problem in an attempt to produce a yellow flowered indumented hybrid.

Since the retention of viability in pollen is no longer difficult, two prospective parents with widely separated blooming dates may be crossed. If the earlier blooming one produced no pollen, a mating can often be consummated by holding pollen from the later blooming plant over winter and using the earlier bloomer as the seed bearing parent. If pollen cannot be released by contact with the pistil, success may sometimes be attained by jarring the anther, thus causing the pollen to flow out.

It is my belief that breeding for size of flower has been overdone in many cases. Emphasis should be placed on the shape of the corollas and their placement in the truss, and such matters as substance and pureness of color.

The ability to last longer than average should be an important goal in breeding. This goal is probably overlooked more often than sought after. A truss on the show bench picked fresh that morning may look fine and take a ribbon, but how long will it last in the garden?

Below is a list of characteristics discussed above, which I think desirable to breed for. Included are some species or hybrids which might, hopefully, help to attain the desired goal.

For plant sturdiness: *yakusimanum, Noyo Chief, calophytum.*

For dwarfing effect: *yakusimanum, williamsianum, dichroanthum, bainbridgeanum.*

For good foliage: *yakusimanum, williamsianum, Noyo Chief, wardii, strigillosum, campylocarpum.*

For retention of foliage: *yakusimanum.*

For glossy leaves: *Noyo Chief, wardii.*

For indumentum: *yakusimanum, bureavii, macabeanum, rex, fictolacteum.*

For beauty of new growth: *yakusimanum, bureavii, fictolacteum, macabeanum,* selected *strigillosum* forms.

For long lasting blooms: 'Crest', *dichroanthum.*

Hybridizing rhododendrons is, as has been said, the only hobby in which you can spend five to fifteen years in anticipation and have but one day of frustration. ▲

R. yakusimanum, A. M. form, Photo: B. O. Mulligan

That *NEXT* Flat of Plants

*EDWIN C. BROCKENBROUGH, M.D.**

It has been predicted that the future of rhododendron hybridizing will be primarily in the hands of the amateur breeder. This is probably a safe prediction because today's professional nurseryman, for economic reasons, cannot afford to devote the time and space necessary to raise hybrid seedlings on the chance that an occasional plant will prove superior and worthy of propagation. For each plant so selected, there may be hundreds which should be consigned to the burning pile. The nurseryman who does engage in this activity will do it for love of the genus rather than for hope of profit. What can the amateur hope to accomplish? If he casually mates a pair of hybrids growing in his garden, probably not much; but if he has a goal and selects parents with genetic characteristics to achieve that goal, the possibilities for developing superior new plants will be greatly enhanced.

The rhododendron breeder can search for desirable qualities in an unbelievable variety of species, many of which have been little or never used in hybridizing. Among a genus of nearly a thousand species, only a relative handful are represented in the rhododendron hybrids of commerce. *Rs. fortuneiu, griffithianum, discolor, catawbiense, arboretum, thomsonii, griersonianum, campylocarpum, wardii, williamsianum* — these species, plus a few others, provide the gene pool for the majority of our well known hybrids. Each species has made its particular contribution to flower size, hardiness, color, or growth habit. The potential of the genus, however, has barely been tapped. Not all of the hundreds of species in cultivation have attributes desirable in a garden plant but there are many which offer exciting possibilities for extending the blooming season, expanding the color range, and improving plant habit and foliage characteristics. Sometimes these desirable genes may be found in hybrid combination but often the breeder may wish to go back to the species, especially if there is a superior form available which has not previously been used in breeding.

What are some of the goals for rhododendron development of the future? I think that a few of the trends are already in evidence. Smaller plants, more restrained in growth will be needed for tomorrow's smaller homesites. Rhododendrons that reach 20 to 40 feet in height at maturity, as do many of the familiar "Pink Pearl" types, will hardly be welcome outside the dining room window. The trend away from the use of pesticides and chemical sprays of all sorts will make natural disease and insect resistance increasingly important. Greater cold hardiness and heat tolerance are ever-present needs, although here in the Northwest we have a tendency to forget this until we are reminded by one of our rare extremes of weather. By continually working towards plants with a broader climatic range, not only will we have more satisfactory hybrids for our own area but gardeners in less favored climates will be able to enjoy them as well. Attractive foliage has been an elusive quality in breeding programs of the past, largely because of the emphasis on bigger and better flowers. Yet much of the charm of the species lies in their distinctive leaf structures and plant habits. Some of the most desirable characteristics, indumentum, for example, are recessive and require careful selection of the parents to bring them out. Selfing and back-breeding are useful technics in this regard. The new growth on many species is as attractive as the flower, and

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*Dr. Brockenbrough is President of the Seattle Chapter of the American Rhododendron Society. He is an avid amateur hybridist whose main interest is in improving foliage and propagating with lights for amateurs. See "Florescent Light Bench for Growing Seedlings", AMERICAN RHODODENDRON QUARTERLY, Vol. 24, II, April, 1970.

preservation of these distinctive colors and textures in emerging foliage is another goal for the hybridizer.

How can the rhododendron hobbyist participate? I doubt that there are many gardeners, even among the most enthusiastic, who have the time and space to devote to making dozens of crosses and raising hundreds of plants each year. Most, however, could raise a few seedlings that another breeder had in surplus quantity. Others may wish to obtain seed through the American Rhododendron Society to germinate and grow on. The "Seed Exchange" is the means by which members share surplus seed from their own crosses with other growers who wish to join in the search for that outstanding new variety. Sooner or later many rhododendron fans yield to the temptation of producing a few crosses of their own. The technics for making the cross, harvesting the seed, and growing the seedlings are described in a number of articles and textbooks. *Rhododendrons of the World* by David Leach is a particularly good source of information on these subjects.

In recent years the availability of plant-growth fluorescent lights have greatly simplified seed growing for the amateur. Under a few of these light tubes, seeds can be germinated in the fall, soon after harvesting, and grown inside the home during the winter. By spring, the seedlings will be large enough to grow outdoors with some protection and by the end of the summer, they should be the size of three year old rhododendron seedlings grown under natural daylight only. Since time is the greatest adversary of the hybridizer, to be able to raise plants to blooming size in three or four years, rather than six or seven, is a great advantage.

The real fascination of amateur hybridizing is in the pleasure of watching your own small plants develop and in anticipating the arrival of the "Rhododendron of the Century" when each finally comes into flower. Someone once said that what he likes about hybridizing is that his seedlings provide him with years of enjoyment and only one day of disappointment — the day they first bloom! But then that show-winner might just be in that next flat of plants!

Good foliage and beauty of new growth make R. *strigillosum* an outstanding species to use for hybridizing. Photos: Cecil Smith of a plant in his garden.

Some of My Observations on Rhododendron Hybridizing

*H. L. LARSON**

Since 1961 when 'Some of My Observations on Rhododendron Hybridizing' was published in the 'Proceedings of International Rhododendron Conference', my thoughts on this subject are about the same.

If some distinct feature appears in a rhododendron we do not hesitate to use these plants for hybridizing to improve and intensify these characteristics. Such an incidence occurred last spring when we crossed the very fragrant *R.* 'Snow Bird' with *R.* 'Lady Chamberlain var. Chelsea.' This was done to get fragrance as well as color in an azaleadendron. Also the pink form of *R. moupinense* was used with *R. mucronulatum var.* Cornel Pink. This spring we will cross *R. mucronulatum var.* Cornel Pink with *R.* 'Seta.' These crosses must be considered novelties and it is possible that they could be used for future hybridizing.

We have used rhododendrons of the lepidote series and produced the following hybrids: *R.* 'Lucy Lou,' (R. ciliatum var. Bergie x leucaspis) x leucaspis and *R. 'Cindy,' (R. calastrotum x ciliatum var. Bergie.)* There are other lepidote hybrids in the Nursery that are possibly good enough to be named at some future date.

Among the elepidote rhododendrons, we have used *R. strigillosum* a number of times to develop such plants as *R.* 'Etta Burrows', *R.* 'Red Majesty', *R.* 'Crossroads' and *R.* 'Scarlet Nymph' which have been well received whenever shown. Other *R. strigillosum* crosses will be named. It is evident from the results we have had with this particular *R. strigillosum* that it is an outstanding parent. It is possible that its characteristics will prevail in the hybrids and many new and fascinating plants will appear in the future. We do not think that all the *R. strigillosums* will give the same results as the one in our Nursery. There is a possibility that in hybridizing one must find good species as well as good hybrids for breeding purposes.

A number of years ago we received from England a plant of *R. wardii* much unlike the other *R. wardii's* in the Nursery because of its glossy leaves and fine yellow flowers. We crossed this plant with *R. Virginia Scott* and the result was a bright yellow with much larger flowers and larger and more glossy leaves. This plant has been named *R.* 'Mrs. Lammot Copeland'. Another bright yellow, *R.* 'Marge Baird', is a cross of *R.* 'Iviza and *R. campylocarpum,* with a red spot on the calyx and also in the flower. Like *R.* 'Mrs. Lammot Copeland' this plant could also be very useful in the future hybridizing programs.

Several years ago we decided to try for better blue rhododendrons, crossing *R.* 'Blue Ensign' with *R. ponticum.* A good blue came into being which we named *R.* 'Blue Jay'. Two other plants of this cross are also good. *R.* 'Purple Splendor' x *R.* 'Susan' gave us four plants with good qualities. These will have to be looked at a few more years to better appraise them.

White rhododendrons seem to impress us more than others especially at sunset or dusk when their true beauty is appreciated. Crossing *R. calophytum* and *R.* 'Grisette' gave us an early blooming white rhododendron with a small red blotch. The buds open white which would indicate this plant to be good for future hybridizing. The truss and flowers are much larger than *R. calophytum,* the leaves smaller. Also in the white or pale yellows are a number of late blooming hybrids involving such plants as *R. auriculatum, R. lodauric, R.* 'Mrs. Alice Franklin, and *R.* 'Virginia Scott'.

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*Mr. H. L. Larson, a Tacoma nurseryman, has been breeding rhododendrons for over twenty years. Several of his hybrids have received A. R. S. awards.

There will be a number of *R. yakusimanum* crosses coming into bloom this spring. All yakusimanum crosses can be considered good garden plants. I think the second generation crosses of this plant will produce the sharper colors. It is possible that this species will have to be watched closely as there could be a great difference in which *R. yakusimanum* is used. The large mature plants of *R. yakusimanum* in our Nursery show considerable variation. In our hybridizing program we are using the two very dwarf forms.

Of the more tender varieties, we crossed *R. bullatum* and *R. taggianum* producing *R.* 'Silver Sheen' which is a very good large flowered white for indoor cultivation. *R.* 'Truce' is a cross of *R. cinnabarinum* and *R. polyandrum* and has cream or off-white large flowers about the same shape as *R.* 'Lady Chamberlain var. Chelsea'. It has been growing outside for the past ten years and seems to be fairly hardy. *R.* 'Royal Flush' x *R. crassum* gave us a bicolored flower, a mixture of red, pink and yellow. The flowers are *R. cinnabarinum* type but much larger and bloom in July. This plant has also been out in the open about ten years with no frost damage. Our Nursery is located in one of the coldest areas in Western Washington and does not receive the benefit of the marine air of Puget Sound.

The hybridist of the future would have the best results crossing red with red, yellow with yellow, blue with blue, pink with pink, white with white and orange with orange. This would give a clearness in color that could not be obtained otherwise. There are times when this cannot be done such as with *R. yakusimanun* where all colors are used in the first generation. The second generation could be different using yellow on *R. yakusimanum* crosses which have as one of the parents yellow, red with *R. yakusimanum* crosses where red has been used. To make myself clear for example, *R. yakusimanum* x *R.* 'Idealist' crossed with *R.* 'Virginia Scott' or *R. yakusimanum* x *R.* 'Mars' crossed with *R.* 'Etta Burrows'. In selecting plants for hybridizing watch for growth habit, good foliage, clear color and the perfection of the individual florets and many flowers in a truss. More people like the large full compact trusses than the loose droopy ones. In other words, most home landscapers would prefer *R.* 'Cynthia' type trusses to that of such plants as *R.* Fabia.

I would select *R.* 'Seattle Gold' as having the most beautiful florets of any rhododendron and therefore a first-class yellow for future hybridizing. Our Seed List contains many crosses which exemplify to some extent what plants are most suitable for hybridizing purposes. There are of course many other plants that could be used in a hybridizing program; it is impossible to do all the things you had planned to do.

MRS. ROBERT BERRY HONORED

For outstanding contributions to the genus rhododendron and to the American Rhododendron Society, Esther Berry (Mrs. Robert), a member of our BULLETIN Editorial Board, was awarded that Society's Gold Medal, its highest honor, at their Annual Meeting in May 1970. Mrs. Berry has served as a Director of the Rhododendron National Board, as President of her Grays Harbor Chapter, as a judge for numerous shows, has aided in developing rhododendron plantings in many public areas, and has through her own interest and vitality created interest in rhododendrons among many groups and individuals. But her greatest accomplishment by far has been to initiate, develop and continue to carry out with the aid of her many friends what has become the most exciting project of the American Rhododendron Society — the Seed Exchange Program. The program has been an outstanding success since its inception. It has grown to almost prodigious proportions with rhododendron buffs from many parts of the world contributing seed which they have collected either in the wild or from their own crosses. In return these same buffs are buying and raising rhododendrons that have been previously only names in books or totally unobtainable through the usual sources. Esther Berry — we salute you!

D.E.B.

R. *calendulaceum* (Flame Azalea) blooms in May or June in the Arboretum. Photo: E. F. Marten

The Desirable Deciduous Azaleas

*MARJORIE W. BAIRD**

Color, fragrance, beauty of form, and variety of size and foliage—all these are available in the deciduous species azaleas. A group of them planted in harmonizing colors, will relieve a heavy monotony of large-leaved evergreen shrubs, or underplanting them with an evergreen groundcover provides splashes of color in spring, summer, or fall.

Sixteen species are native to the eastern United States and one to our west coast. I have heard of none which will not adapt to the Pacific Northwest. Our western azalea is a bit more choosy; it does not thrive in the east. Gardeners east of the Cascades might find it worth their while to experiment with some of these species to increase their choice of plant material.

It is interesting to note, in the late Mr. Frederic P. Lee's *Azalea Book*, that the bulk of the deciduous species azaleas is divided between the eastern United States and eastern Asia. The "mavericks" are *R. luteum,* sole representative in the Caucasus region of eastern Europe and *R. occidentale,* alone in the western United States. "This curious concentration of nearly all azalea species in two relatively narrow longitudinal areas separated by 7000 miles and the earth's largest ocean provokes speculation as to how it came about. Evolutionary forces of a basic geophysical character are needed to account for such regularity and compactness in the distribution of azaleas." Mr. Lee goes on to say that much of the flora whose ancestors date back to

*Mrs. Baird, a member of the BULLETIN Editorial Board, is a frequent contributor. As a Board member of the National Rhododendron Society, she serves it as well as the Seattle Chapter in numerous ways.

well over a million years ago, has been destroyed. What remains today in the north temperate regions are types whose inherent ability to diversify characteristics gradually and to move habitat through seed dispersal saved them.

About 1690, an English missionary to Virginia, John Bannister, discovered the Swamp and Pinxterbloom Azaleas. During the 1700's, the others were probably discovered but not called by their present names. Catesby, Michaux, and Bartram were among the famous plant hunters who collected mostly for the great growers in England and on the Continent. Linnaeus, on the strength of seeing the two first discovered American species, established them as a genus. However, with the introduction of the evergreen azaleas from eastern Asia, they were lumped together by George Don, the taxonomist, in 1834 under the genus *Rhododendron.*

The *Azalea* Series is one of the groups in the genus whose members have many characteristics in common. Basically, these are: 1) usually deciduous leaves; 2) absence of scales on the leaves and other parts; 3) frequent presence of strigose hairs; 4) a terminal inflorescence; 5) flowers with 5 to 10 stamens. The most nearly related *Stamineum, Ovatum,* and *Albiflorum* series have an axillary inflorescence. Deciduous species in the *Dauricum* and *Triflorum* series are easily distinguished by the presence of scales on the leaves and other parts.

The *Azalea* series is broken down into Subseries and the largest of these is arranged in Alliances, thus:

A. *Luteum* Subseries
   1. Austrinum-Prunifolium Alliance (Yellow-orange-red color range)
      austrinum, calendulaceum, speciosum, bakeri, prunifolium, luteum (Eastern Europe)
   2. *Alabamense-Atlanticum* Alliance (Early whites)
      alabamense, atlanticum
   3. *Roseum-Nudiflorum* Alliance (Mostly pink or pinkish)
      canescens, occidentale, nudiflorum, roseum
   4. *Arborescens-Serrulatum* Alliance (Late whites with pinks and yellows infiltrating)
      arborescens, serrulatum, oblongifolium, viscosum
   5. *Molle-Japonicum* Alliance
      molle, japonicum (Both Asian)

B. *Schlippenbachii* Subseries (All Asian)

C. *Canadense* Subseries
   albrechtii (Asian), *canadense, pentaphyllum* (Asia), *vaseyi*

D. *Nipponicum* Subseries
   nipponicum (Asian)

Following are some brief descriptions of the American azaleas:

R. austrinum (Florida Azalea): habitat, northern Florida, the coastal plain of Georgia and Alabama to southeast Mississippi; an upright, medium to tall shrub; flowers, creamy to golden-yellow through the orange, apricot, red shades; hardy; blooms in the Arboretum from as early as April to as late as June.

R. bakeri (Cumberland Azalea): found on the Cumberland Plateau from Kentucky, south across Tennessee to the mountains of northern Georgia and Alabama; height, 2 to 4 feet, occasionally taller; leaves glaucous beneath; flowers in the orange and red shades; appears in the Arboretum as early as May and late as July.

R. calendulaceum (Flame Azalea): discovered by John or William Bartram in the 1770's, it grows from Pennsylvania and Ohio in the north, through the Appalachian and Piedmont region to Georgia; plant tall and upright, sometimes stoloniferous; flowers with the foliage, in shades of yellowish-orange to scarlet; very hardy; seen in the Arboretum in May or June.

R. prunifolium (Plumleaf Azalea): grows in a restricted area along the southern Georgia-Alabama border; reaches a height of about 15 feet; reddish-orange to red flowers appear with the leaves; no record of bloom in the Arboretum for the past few years, but in its habitat, blooms in July and August.

R. speciousum (Oconee Azalea): inhabits the Piedmont regions of Georgia and South Carolina; is low-growing and flowers with the leaves, in the orange and orange-red shades, sometimes with a deeper blotch; April or May-blooming in the Arboretum.

R. alabamense (Alabama Azalea): a compar-

atively scarce plant of the wooded hilltops of north central Alabama; stoloniferous, and grows to about 3 feet; foliage fragrant, glaucous beneath; flowers with the leaves, white, usually with a yellow blotch and with a distinctive jasmine or lemon scent; in the Arboretum, blooms in May.

R. atlanticum (Coast Azalea): found on the coastal plain from southern Pennsylvania and Delaware south to South Carolina; low and stoloniferous, especially in damp, woods soil; very hardy; flowers, before or with the leaves, pungently scented, white or white, flushed pale violet-red, sometimes with a yellow blotch; Arboretum plants bloom in May.

R. canescens (Florida Pinxter or Hoary Azalea): inhabits the coastal plains from North Carolina to Florida and west to Texas and Arkansas; the most prevalent azalea in the South; grows from medium height to 15 feet; honeysuckle scented flowers, before or with the leaves, whitish to deep pink with darker tube; pure white and deep purple forms have been found; has flowered in the Arboretum in May.

R. nudiflorum (Pinxterbloom or Honeysuckle Azalea): grows at lower elevations in Massachusetts, south to North Carolina, west to Tennessee and Ohio; medium to tall in height with graceful form; very hardy; white to pale or deeper pink flowers with darker pink or red tube; sweetly scented; flowers, opening shortly before the leaves, come in April or May in the Arboretum.

R. occidentale (Western or Pacific Azalea): found in southern California, north to southern Oregon, particularly along the coast; also in the Sierra Nevada mountains, south to Mexico, along stream-beds in the cooler valleys—never in those with hot, dry summers; hardy here; tall growing, with foliage often coloring beautifully in the fall; flowers usually with the leaves, rarely before, variable, creamy-white to bronze pink, with orange or yellow blotch, sometimes flushed pink on outer corolla; strong, spicy fragrance; usually flowers in May and June in the Arboretum.

R. roseum (Roseshell Azalea): its habitat, from New England, northern Ohio and Indiana,

R. occidentale on the west side of Azalea Way in the Arboretum. Photo: E. F. Marten

south in the Appalachians to Virginia; an upright plant of medium height, leaves pubescent beneath; flowers clear, deep pink to violet-red, usually with darker, brown-red blotch; filaments the same color as the corolla lobes, which are decidedly pointed; has a pronounced clove scent and is very hardy; flowers, with the leaves, in April and May.

R. arborescens (Sweet or Smooth Azalea): likes moist, shady situations, from New York and Pennsylvania to Georgia and Alabama, west to Kentucky and Tennessee; tall and upright; flowers white sometimes with pink or reddish flush and yellow blotch, and strong heliotrope scent; blooms in June in the Arboretum, after the leaves have unfolded.

R. oblongifolium (Texas Azalea): grows in open woods and along streams in southwest Arkansas to east Texas and Oklahoma; usually white, sometimes pinkish, with a faint clove fragrance; has not flowered in the Arboretum, but in its habitat has late mid-season bloom, after leaves are fully out.

R. serrulatum (Hammocksweet Azalea): native to east central Georgia, south through central Florida and west to southern Louisiana, in wooded swamps; tall; flowers white, sometimes shaded pale violet-red; variable clove scent; is called the southern counterpart of *R. viscosum*; blooms here in June after leaves have expanded.

R. viscosum (Swamp Azalea): found in swampy spots from Maine to south Carolina and Tennessee; upright and tall, to 15 feet; dwarf forms exist; flowers white to creamy, with strong, spicy scent; hardy; blooms with the leaves fully out, in June or July.

R. canadense (Rhodora): inhabits the east coast of Labrador and Newfoundland, south to northern New Jersey; low, upright and stoloniferous; small gray-green leaves; flowers small and rosy-mauve appearing before the leaves; also a white form *(f. albiflorum)*; very hardy and likes cold, moist climate; April-blooming here.

R. vaseyi (Pinkshell Azalea): only close relative of *R. canadense* in north America; native to a small area in the mountains of western North Carolina; tall and upright; flowers, clear pink with green throat with scarlet spots; also a white form (f. *album*); scarlet foliage in the fall; blooms before or with the leaves, in April and May.

The variations in these azaleas in their native state are often the results of hybridization

R. *vaseyi* in full bloom. Photo: Don Normark

which occurs when more than one species inhabits the same area. As more research is done, we may find that many of the types we now consider species are, in fact, hybrids or varieties. The late Mr. Leonard Frisbie, of Tacoma, started an investigation of *R. occidentale* about 18 years ago, possibly with this thought in mind. This work has been continued lately by Britt Smith and Dr. Frank Mossman of this state. (See article by Mr. Smith and Dr. Mossman in the American Rhododendron Society *Bulletin* of July, 1969).

The importance of these deciduous species as hybrid parents must not be overlooked. In the 1820's, a Ghent baker, P. Mortier, crossed *R. calendulaceum* with *R. nudiflorum* to produce the Mortier Hybrids (*R.* x *Mortieri*). At about the same time, the breeding of *R. calendulaceum* and *R. viscosum* with *R. luteum* was begun in England and this group was named the *Ornatum* hybrids. More hybridization followed and all these groups are now lumped together and called, in this country, the hardy Ghent hybrids and in Holland, the *Pontica* azaleas. The *Rustica Flore-Pleno* hybrids were derived from a double flowered form discovered among the Mortier seedlings.

Our west coast azalea was discovered in 1827 and brought to England about 1850. By crossing it with *R. molle* and later with molle hybrids the *Albicans* and *Occidentale* hybrids were created.

Most readers are familiar, of course, with the beauty and popularity of the Knap Hill hybrids. There are four subgroups of these: Knap Hill, which originated at Waterer's Knap Hill Nursery; Slocock, developed at the neighboring Goldsworth Old Nursery; Ilam, by the late Edgar Stead at the Ilam Estate in New Zealand; Exbury, by the late Lionel de Rothschild in about 1922 at Southhampton. The late P. D. Williams of Cornwall also did some developing in the Knap Hill group. With its heritage of *R. molle, R. calendulaceum, R. arborescens,* and *Albicans* hybrids, the Knap Hill group could rarely, if ever, produce a poor seedling.

Observation of habitat gives us the key to growing the eastern species. Although in partial shade the flowers may last longer, the plants for the most part will tolerate full sun. They are exceptionally valuable in the landscape, not only for flower color, but also because of the contrast they create in foliage texture, and when leafless the branching pattern.

Pruning may be done while they are in flower, or just before, and one reaps an extra dividend of a beautiful interior arrangement. Transplanting should be done while they are leafless. To move a large plant, it is best to prune the branches down to 6 or 8" from the ground, dig, and place in new location with a mulch of chips or rotted compost. Do not mulch too deeply, however, as winter mulches reduce the temperatures at ground level and this could cause bark or stem splitting, which damages the buds. If extensive, the plant will die slowly.

Propagation is done by layering, division (as with the stoloniferous forms), seed, and cuttings. Most people prefer to take the cuttings while "soft", just after blooms fade. They should be given high humidity, such as under a mist system or covered with plastic. Bottom heat hastens rooting. If rooted early enough in the season, the cuttings will get a flush of new growth before dormancy; if not, it is probable that they will not continue to grow the next spring.

It is difficult to find deciduous species azaleas in nurseries; Mr. H. L. Larson, of Tacoma, used to have them, and the Arboretum and Orthopedic plant sales have a few. Members of the American Rhododendron Society may obtain practically every one by ordering seed from the Seed Exchange, and this is the most fascinating way to grow them!

In all parts of the country, horticulturists, nurserymen, and hobbyists are experimenting with deciduous azaleas. The quest for the bigger and better hybrids goes on and on, but still the species will remain, with some of us, the desirable, deciduous azaleas!

The Asiatic Deciduous Azaleas

*JEANNE GARDINER**

Among deciduous azaleas, thirteen species are found in eastern Asia. Their color ranges the azalea spectrum; fragrance is an added asset in a few; on some the leaves are unique; fall color is brilliant; and the blooming season stretches from very early February – March to very late June – July.

The largest Subseries, *Luteum*, includes two Asiatic azalea species, both in the Molle-Japonicum alliance. Distinctive features show broader and more open flowers with shorter tubes than our native azaleas. They bloom before the leaves appear and range from yellow through orange and red in colors. There are no glandular hairs, thus no close association with the American *luteum* species, though their colors come closest to the *Austrinum-Prunifolium* alliance.

Molle and *japonicum* have always been confusing nomenclature to the amateur gardener. The yellow *R. molle*, the Chinese azalea, was known for a long time as *chinensis. R. japonicum*, the Japanese azalea, was known as *mollis* in the 1860s. With the experts so confused, it is no wonder the amateurs have had problems ever since. The word *molle* means soft, perhaps to indicate that it is tender. Very few true *R. molle* exist in the United States today. Most are hybrid forms. With *R. japonicum* they are parents of the mollis hybrids, though *R. japonicum* is preferred in general cultivation or as a parent in hybridizing.

R. molle grows on thinly wooded hill slopes of eastern China in Chekiang, Hupeh and Hunan provinces. The plant is open, upright, of medium height, and blooms in May. The cream, lemon, yellow to golden broadly funnel-shaped flowers, often with a large greenish blotch, have five stamens. The plant prefers semi-shade and in the fall the leaves color yellow and orange.

R. japonicum comes from the Japanese alps on Kyushu, Honshu and Shikoku Islands, growing in scrub, open country, and wooded moorlands. It is very hardy and seems to be tolerant of less acid soil than the American species. Colors range from orange, vivid rose-pink, orange-red to red and occasionally yellow, often with a large orange blotch. In *R. japonicum* the five stamens are as long as the corolla, not exserted, the one exception being the *luteum* subseries. It blooms in late May. The sweet fragrance is a delight to some, an anathema to others.

Schlippenbachii Subseries has all Asiatic species, totalling eight. The leaves appear in whorls of two to five at the ends of stems. Terminal buds produce both flowers and leaf shoots. All plants have large flowers and on some they are spectacularly beautiful.

R. amagianum (Mt. Amagi azalea) from southern Honshu Island, Japan, is upright, tall (it could become a thirty foot tree) and blooms very late—in June or July. Its leaves are in whorls of three. The brilliant brick-red flowers form in clusters of two to four in a loose truss. It likes the part shade of a woodland and has striking fall color of reddish-bronze. Cox in *Modern Rhododendrons* says *R. amagianum* is a form of the species *R. weyrichii.* It certainly is closely related, but other books describe the flowers as larger and the plant hardier than *R. weyrichii.*

R. weyrichii, may become a small tree and grows in an open, upright manner. Its color is unique, orange-red, sometimes with a purple blotch, usually described as brick-red. The

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*Mrs. Arthur Gardiner, a member of Unit 41, has been a dedicated and hard working Chairman of the Azalea Section of the Foundation Plant Sale for two years.

leaves are in whorls of three. In his articles in the American Rhododendron Society *Quarterly Bulletin* Frank Doleshy described great masses of salmon-red *R. weyrichii* seen on his Japanese plant expedition in 1969. It blooms in April – May.

R. sanctum (Holy azalea growing in the sacred area of the great Shrine of Ise) is also related to *R. weyrichii.* The plant is tall and may become a small tree to fifteen feet. The leaves are shapely, lustrous, and the flowers are pink with a deeper pink blotch. This is scarce in this country though one northwest 1969 catalog lists it.

Three other species which have similarities and belong to the *Schlippenbachii* Subseries are *R. mariesii, R. farrerae* and *R. reticulatum. R. mariesii* (named for Charles Maries, collector for Veitch) grows in southwestern China and on Formosa. It was introduced into England in 1886, but into the United States only in the last forty years. It is still rare. It is upright, narrow, tall to ten feet, and blooms in late April. It blooms later than *R. reticulatum.* The funnel-shaped flowers are pale-rose with darker red-purple spots. It is hardy but needs half shade.

R. farrerae was named for the wife of a Captain Farrer (not to be confused with Reginald Farrer) of the East India Company in 1829 when it was introduced into England. The leaves are broadest below the middle. There are eight to ten stamens with a longer pistil. The two inch, pale lilac or rose to deep rose flowers with a deeper blotch bloom in June. It is the most tender of the thirteen species and is a greenhouse plant here in the northwest.

R. reticulatum (Rose azalea – net-like) is a native of central and southern Japan. It is a three foot dwarf on Yakushima Island, usually of medium height, though Cox says it can also be a twenty-five foot tree. There is some variation in bloom, usually April – May, but as early as *R. mucronulatum* in some varieties. The flowers are rose-purple (Frank Doleshy's were lavender) and Lord Aberconway showed a white variety *leucanthum* at the 1968 London Rhododendron Show. It is free flowering and the rounded leaves color well in autumn.

A close-up view of a branch of R. *schlippenbachii.* Photo: Don Normark

R. quinquefolium has leaves in whorls of five. The rounded leaves are pale green with thin purplish-brown edging. It is an upright shrub, tall, usually to twelve feet, though *Sunset* says it can be as much as twenty-five feet. The small pure white, widely funnel-shaped pendulous flowers with green spots bloom in April – May. It has excellent fall color.

R. schlippenbachii (Royal azalea) is worthy of the finest garden. The heart-shaped leaves appear just after the flowers in whorls of five. The dainty flat pale pink to soft rose fragrant flowers, spotted reddish brown on the upper lobe bloom in early April. It makes a colorful shrub, six to ten feet in time. It is hardy, with pinky-bronze leaves unfolding in the spring and ending the season with a riot of yellow, orange, scarlet and crimson color in the fall. *R. schlippenbachii* should not be grown in full sun for the foliage scorches.

The *Canadense* Subseries includes two Japanese species, *R. albrechtii, R. pentaphyllum.* Like *R. canadense* and *R. vaseyi,* the two

(continued on p. 20)

R. *fictolacteum* (Rock 193):
beauty of new growth; rich,
brownish indumentum
Photo: Cecil Smith

A Potenti

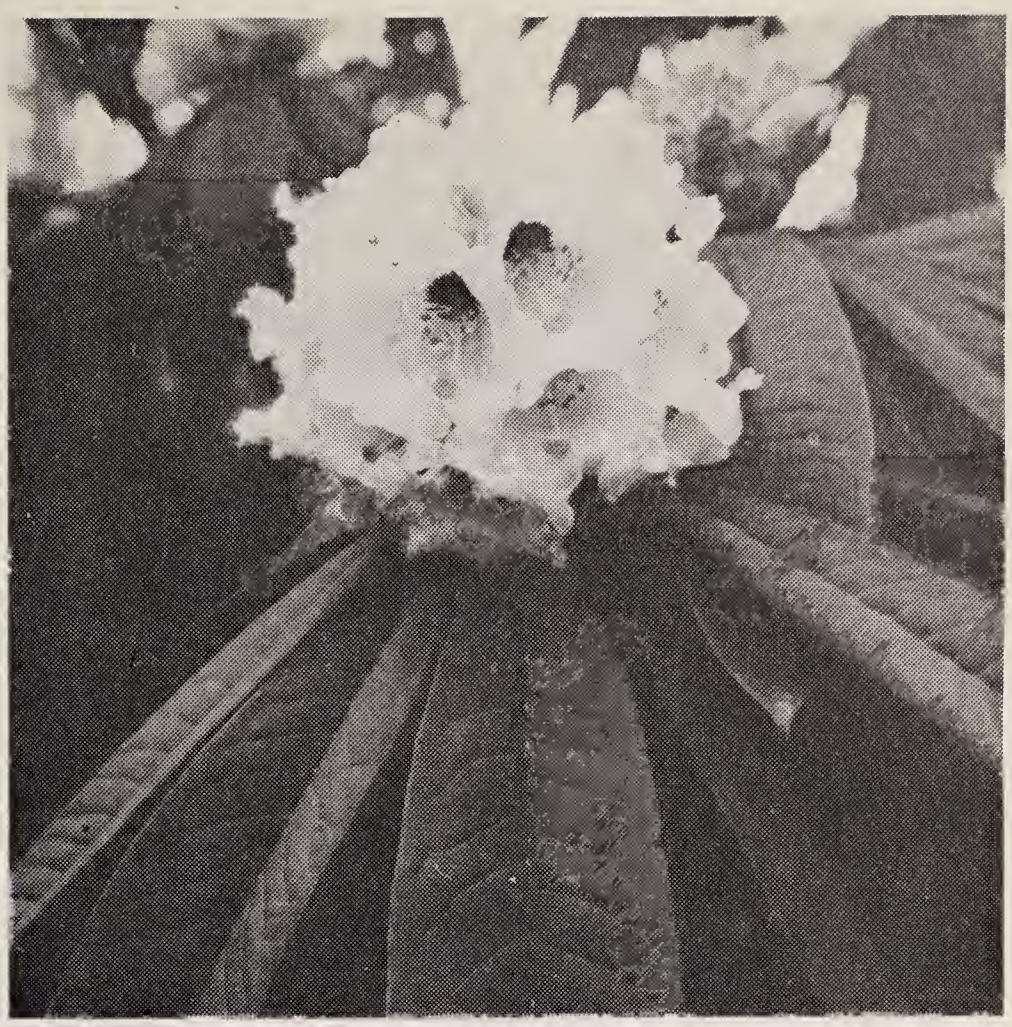
Tomorrou

l Gene Pool

r

s Hybrids

R. *wardii* (Ludlow & Sheriff intro.)''
for good foliage; glossy leaves
Photo: Dr. Carl Phetteplace



R. *calophytum:* for plant
sturdiness; beauty of
foliage
Photo: Cecil Smith

←

R. *bureavii:* beauty of new
growth; rusty-red wooly
indumentum
Photo: B. O. Mulligan

R. *macabeanum:* beauty of new
growth; greyish-white indumentum
Photo: Cecil Smith

(continued from p. 17)

American species in this subseries, these also have distinctive features. The flowers are rotate-campanulate with very short wide tubes. The new shoots do not come from the terminal buds like the other subseries, but from separate buds below the terminal flower bud.

R. albrechtii (named for Albrecht, a Russian naval surgeon who died in 1860) grows in southern Hokkaido and northern Honshu Islands. It is an upright shrub of medium height, but can sometimes be found more than ten feet. It blooms very early, in a gentle winter as early as March. The two inch, bright deep rose flowers with olive green spots, four or five in a truss, cover the plant like a small *R. schlippenbachii*. The flowers come before the leaves which are in whorls of five. It is a hardy shrub, likes open shade, but should be protected from the hot west sun. The 1956 *Rhododendron Handbook* says, "Hardy — but fastidious as to situation."

R. pentaphyllum (Five leaf azalea) is frequently confused with *R. quinquefolium* when not in bloom. At one time it was known as *"quinquefolium* pink." However, in addition to the difference in color, the leaf shoots spring from separate buds below the terminal bud. *R. quinquefolium* has leaves at the end of branchlets. *R. pentaphyllum* grows upright, tall (it may become a small tree), and blooms in April. It prefers shade and is not hardy in sub-zero climates. The leaves color beautifully in the fall. The bell-shaped flowers are shy in blooming, solitary or in pairs, a bright unspotted rose-pink. Frank Doleshy remarked that they grew as trailside brush, or as graceful little ten foot trees. He was surprised that the young plants had every variation of reddish color on the leaf margins, whereas the mature trees were almost all plain. The Japanese name *Akebono Tsutsuji* refers to the pink color of sunrise.

Nipponicum Subseries has only the one species, *R. nipponicum* (from Japan). The inconspicuous tubular — campanulate flowers hang pendant in clusters of six to fifteen. They are yellowish — white with a greenish blotch. In this plant the leaves and bark are more important. The leaves are large—to seven inches, and are similar in shape to *R. schlippenbachii.* They turn a brilliant orange and crimson in autumn. *R. nipponicum* has some resemblance to the genus *Menziesia* because the papery, cinnamon — brown bark shreds off, leaving lustrous brown stems.

Though plants of some of the rarer species may not be available now, the American Rhododendron Society Seed Exchange is bringing most of the species into members' gardens where they will gradually spread to nurseries and the general public when their beauty is appreciated. ▲

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The Herbert G. Ihrig Collection

DORIS BUTLER

Of interest to all Arboretum devotees, and Foundation members in particular, is Mr. Herbert Ihrig's gracious gift to the University of Washington Archives of those personal papers and correspondence which pertain to the development and early days of the Arboretum.

Mr. Ihrig, now retired and living on Bainbridge Island, was among the first to enlist in the efforts to establish an arboretum. In 1933 he attended the first meeting of a small group who met in the Loren Grinstead home to explore the possibilities of developing an Arboretum. Later, the September 6, 1934 minutes of a Seattle Board of Park Commissioners list him as a member of a temporary committee whose purpose was to implement that development. In 1935 Mr. Ihrig was appointed a member of the first Advisory Council for the Arboretum; one of the first actions of that group was the formation of the Arboretum Foundation.

Mr. Ihrig was one of the first Board members of that group, continuing also to serve on the Advisory Council for a number of years.* As Rhododendron Chairman for the Foundation, Mr. Ihrig's contributions were many. Through his efforts donations and gifts of both plants and money were obtained and Rhododendron Glen and Loderi Valley slowly became realities which today are among the prized areas of the Arboretum.

In addition to these activities, Mr. Ihrig also served as Chairman of the BULLETIN Editorial Committee. It is interesting to note in the December, 1946 BULLETIN (Volume IX, No. 4, p. 18) the following comment pertaining to his retirement from that position:

> 'For many years under his dynamic planning and his astuteness, both in authorship and in editorial direction the BULLETIN has grown from a feeble, almost apologetic infancy into a publication of some stature in its field."

That same planning and astuteness went into the organization and development of the HANDBOOK OF RHODODENDRONS compiled by the BULLETIN committee and published in 1946 by the Foundation. The HANDBOOK is now a collector's item.

These comments are made because the notes and correspondence which comprise the HERBERT G. IHRIG COLLECTION are concerned directly with these events. The papers will be catalogued and properly preserved and will help to authenticate the development of something unique and beautiful which belongs to us all. The COLLECTION is made available through Mr. Ihrig's generosity and the efforts of the BULLETIN Editor and Associate Editor and Mr. Richard Berner, University of Washington Archivist. It will be accessible especially to Foundation members and to members of the Seattle, Tacoma and North Kitsap Chapters of the American Rhododendron Society.

Because your Editorial Board was excited with the material, we are printing two letters as a sample of that which is to be found in the HERBERT G. IHRIG COLLECTION. Thank you, Mr. Ihrig, for making them available to us!

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*Dr. Henry Schmitz' manuscript on the history of the College of Forest Resources, soon to be published by the Foundation, contains a chapter detailing the development of the Arboretum, and has been used as our source.

NEW COURT,
ST SWITHIN'S LANE,
LONDON, E.C.4.

14th May 1940

Dear Mr. Ihrig,

I think Mr. Fred Balfour was talking to me about a letter he had received from you asking the same question. It was really because of the absence of any information on hybridizing that I have written the series of articles in the Year Book. Mangles, of course, wrote on hybridizing rhododendrons between 60 and 40 years ago, but his articles are out of date and unprocurable, although they could be looked up in old numbers of the gardening papers. Millais occasionally has a note about hybrids in his book on rhododendrons.

With regard to the paragraph about what the results of crosses are likely to be, I think it can be said that rhododendron hybrids follow the Mendelian Law. Generally speaking, primary crosses between two species will give intermediate results and, although in the case of Loderi which the late Sir Edmund Loder made both ways between Griffithianum and Fortunei, Griffithianum as the pollen parent 60% of the flowers were large and 40% on the smaller side, whereas with Fortunei as the pollen parent the reverse followed, in this case in the majority of results the size of the flower followed the pollen parent, in all other particulars they seemed intermediate. Personally I have made some of my crosses both ways and, for example, with Tally Ho (Griersoniamum x eriogynum) there was no difference whatsoever. When a species is used on a hybrid different results of course are obtained; a species on to a primary hybrid gives pretty constant results; a species on to one of the catawbiense or ponticum hybrids gives variable results, some better than others and of course with a considerable amount of colour variation, catawbiense or ponticum being very dominant. The crossing of a hybrid and a hybrid nearly always reverts to the dominant type, but it is not to be recommended. I have always regretted any of these I have made and practically all have been burnt. Discolor on to R. de Bruin (a ponticum hybrid) out of about 100 plants about 6 or 7 were retained at Exbury; the result of these has been the Norman Shaw cross. They are quite pleasant in June. The best of these crossed with Griersonianum has given a very fine hybrid indeed, of which about 60% are worth keeping and 10% are as good as any I have at Exbury. I would not however care to re-cross any of these with anything but a species.

I have written rather at full length as I know the difficulties you have in America with the extreme cold that your rhododendrons have to put up with. In my opinion maximum and Ungernii could be used by you to get hardiness into some of the Chinese or Himalayan rhododendrons, and it might well be worth trying to get a race of rhododendrons hardy in the States without any catawbiense or ponticum blood in them. This would obviate the magenta tint which spoils so many of the really hardy rhododendrons, and I am working hard in England to try and get really hardy rhododendrons without any of this blood in them, but

here of course we are lucky as we can use discolor. I do not know how hardy Fortunei is with you. It is quite a valuable rhododendron for hybridizing in many ways but is apt to give a blue tint, of course, with the reds. Still Luscombei (Thomsonii x Fortunei), which is a perfectly hardy rhododendron in England, crossed with campylocarpum has given me a very fine range of yellows and yellowish pinky whites which seem hardy in England anyhow, and Slocock by crossing Fortunei with campylocarpum has got a hardy race of yellow rhododendrons. If maximum were forced into flower, campylocarpum on to this might give good results. Here again there is another chance for the hybridist in America: Souliei seems one of the hardiest of Chinese rhododendrons and this if crossed with maximum gives a very pretty hybrid, though slightly small flowers. (I have made this cross.) If you could do this you would have a base to use to cross with some of the arboreums, Thomsonii, campylocarpum, and perhaps discolor, which might give rhododendrons possible for your climate.

Any other information you may require I will be pleased to give you.

Yours very truly,

(Lionel de Rothschild)

Named Hybrid
Rhododendrons
From Cuttings

G. G. NEARING

RHODODENDRON GROWER

East Ridgewood Avenue near Paramus Road

Ridgewood, New Jersey

P. O. Box 338 Telephone RIdgewood 6-4396

Rock Garden
Rhododendrons

September 25

Dear Mr. Ihrig,

I heartily agree with you as to the need for hybrid races of the smaller Rhodos, and am already working along those lines. We need little, compact plants founded on Metternichii, Williamsianum, haematodes, aperantum, campylocarpum, proteoides, repens, and some others. I have campylocarpum X Williamsianum with a flower bud, and there may be buds setting on orbiculare X Williamsianum. Dichroanthum X haematodes, Smirnowi X haematodes, Thomsonii X repens are coming along, but show no signs of flowering. Of course I can use the caucasicum hybrids with these. It is necessary for a while to make the best crosses I can, hoping that the future will permit me to make what seem the ideal ones. There is room for a hundred breeders to work on different sections of that list. For you who have no

hardiness problem, the field can be wide and the requirements simple, but here I must make each final cross with some hardy element in it. The primary crosses are usually nothing to talk about, because they are commonly uniform, and an average between the two parents. The purpose of hybridizing is to promote variation, and this variation comes in the second generation. It is unfortunate that Rothschild has put so much stress on primary hybrids. I am stressing them myself at this moment, but they are only a means to an end. Loderi is a glorious exception, being an end in itself, but the run of primary hybrids are not as beautiful as either parent. Take this hybrid which I hope some day to make: (catawbiense compactum X degronianum) X (campylocarpum X Williamsianum). Half the progeny at least will be worthless, and for that reason Rothschild would sneer at it. But I do not want that half of the progeny. I want the other half. There will be a chance of combining the hardiness of catawbiense (this dwarf form being even hardier than the type) with the yellow of campylocarpum, the pink of Williamsianum, and the very different compact habits of catawbiense compactum, degronianum and Williamsianum. This single cross might yield a dozen wholly different forms, fit to name, out of a hundred plants. If I have to throw away the other 88, that is all right with me.

In this group I have had great difficulty obtaining pollen. The seeds of the primary crosses mentioned, all came from England or from Gable. If I can get more pollen, it will speed up the work very greatly. There is no certainty that the primary crosses will be fertile, and if one cross proves not to be, I want to make it over again with different plants and try again.

Then there is another prospective group of hybrid races on which, thanks to Gable's work, we have already a good start. I suppose you know his Conestoga (carolinianum X racemosum.) It is very good, but not quite hardy enough. I have also carolinianum X Keiskei, racemosum X Keiskei, Augustinii X Roylei, moupinense X lutescens, minus X chartophyllum, pubescens X Keiskei and carolinianum X Edgeworthii to work into this group, and these will furnish reds, yellows and a blue in the parentage. If the Edgeworthii hybrid is fertile, it will mean the possibility of very much larger flowers, and as I have some seeds of sino-nuttallii, I even hope at some future time, to introduce those giant flowers into the hardy forms. It may fail, but will do no harm to try. The present stage of progress in the carolinianum hybrids however, is still rather humble. I have just set out a large bed of seedlings from Conestoga. The seed was from chance pollen, but I want to look at everything that chance would bring from so good a parent as Conestoga. The differences in foliage and habit are startling in the young plants. They show every variation between the two known parents, and while most will have to be thrown away, some will be worth growing for their foliage alone, regardless of how they flower. If you would like to try some of the seed, I think I still have some, but perhaps you have it also. Some I collected myself, and some came from Gable.

When you suggest hybridizing the Saluenense series, you are mentioning one of my most cherished projects. I had radicans and keleticum in bloom this year, and should have plenty of both next year. No other members of the series except saluenense itself lived to grow up, and saluenense has not bloomed. But I have other species coming along, and they

may do better than the last time I tried them. Unfortunately last May we had very late frosts, destroying flowers and buds on many things I had hoped to use. Either for that reason or for some other, practically all my attempts to cross radicans and keleticum failed. I may have a few seeds of keleticum X racemosum, for one capsule ripened after a fashion. If there are any seeds, and if they germinate, and if the seedlings grow and thrive, and if they bear fertile flowers, I may be able to found a hardy race on that cross.

My program is to build up a collection of all the species I can grow, and of all likely primary hybrids. But some of the crosses I want to make will take so many years, that I must make shortcuts wherever possible. I would welcome pollen of any species, any primary cross, or any cross, one parent of which is a good species. For instance, I am using Jacksoni (caucasicum X (caucasicum X arboreum) both as a primary cross, which it isn't, and as a species (caucasicum), because I haven't any caucasicum, and can't grow it. The results ought to be nearly as good as though it were caucasicum for a species, and caucasicum X arboreum for a primary cross. Instead of primary crosses I am often obliged to use the ordinary hybrids on one side, and of course they don't give nearly such good results.

I should think you would be interested to do some hybridizing yourself. It is fascinating work, and not at all difficult. You take a flower about to open, but not yet sufficiently open for the bees to get in. With manicure scissors, you cut around the corolla near the base, and lift it off, exposing the stamens. Then you snip off the stamens and put them in an envelope for future use. This leaves only the pistil, which can stand there a day or two until it becomes sticky. Then you take a stamen of the plant you want to cross on it, and touch the tip of the stamen to the tip of the pistil. In the larger flowers you can see the pollen come out, but in the smaller ones, it sometimes requires a hand lens to be sure there is pollen. Then you hang a label on the stem below the flower and forget it until time to collect seed in the fall. It is best to cross several flowers in a cluster, and cut away the rest of the cluster, so that you will have only seed of the desired cross when you go to collect it. I carry a can around full of envelopes containing pollen, and whenever a flower of some desirable thing begins to open, I operate on it, using what seems the likeliest pollen for the purpose.

The trouble with entrusting the work to an institution is this. In order to get worthwhile results, you must be thinking all the time, and institutions can't think. It is necessary to look ahead, because at most you can raise only a few hundred seedlings a year, or a very few thousand. Unless you think, you will raise the wrong ones, and they might just as well be thrown away at the start. Then when the plants get a little size, you can begin throwing some away long before they flower. Some have unattractive foliage and poor habit, and wouldn't be worth growing even if they produced the finest flowers imaginable. Some are subject to diseases, or grow unthriftily, and an unthrifty plant is never worth while. In an institution nobody throws anything away, and a hybridizer is only as good as his ability to throw. I still hate to throw, but am learning.

All the traditional apparatus of hybridizing is unnecessary with Rhododendrons. You need no camel's-hair brush and no cellophane bags. When the corolla and stamens have been cut away, with care of course, not to injure the pistil, or let the stamens touch it

if their pollen is ripe, there is little chance of foreign pollen getting on it to contaminate it. Bags heat up in the sun, and do more harm than good.

I cannot agree with you that the field of the larger Rhododendrons has been covered. I know that Rothschild tries to give that impression, assuming that when the primary hybrids have been made the work is done. But in reality it has just begun. With any group of cultivated plants, when a new and worthwhile species is added to those cultivated, if it is really different, and if it can be crossed with those already in use, the result is a surge of hybridizing which lasts many years and has far-reaching effects. With Rhododendrons, 0 or 30 superb species have been discovered since 1900. The breeders who know their business are of course using the primary hybrids to produce further, and much more worthwhile results, but it will be another fifty years before even a few of the new species are thoroughly assimilated, while the larger species will take a century or two. R. Griffithianum was introduced nearly a hundred years ago, somewhere about 1850, yet the rage for Griffithianum hybrids was at its height after 1910, and has still not nearly spent itself. R. discolor was not introduced until about 1900, and it is utterly impossible to develop the potentialities of a species like that in less than fifty years. The discolor hybrids are still in the uncertain stage. R. Griersonianum was not introduced until about 1920, eriogynum and facetum, perhaps a little before that. They are still in the primary hybrid stage, for the most part. R. lacteum was introduced before 1890, and has a tremendous reputation, but practically no hybrids. R. Falconeri, dating back to around 1850, has still only a coupld of hybrids. Some of these species have simply been side-tracked because the breeding work will necessarily take so long, and there is so much readier work at hand. I don't believe the possibilities of the genus Rhododendron have been more than scratched.

I am deeply appreciative of the work Rothchild and the other leading amateurs have done. They have financed expeditions and botanical research, and have done a vast amount of breeding that has great value. But I can't agree with their ideas on the limitations of breeding. It is true that when we cross two hybrids of complex parentage, we get a great deal of rubbish, and little likelihood of anything good or new, but if you are good at calculus, you can compute the number of primary crosses that can be made among fifty species, remembering that if the parents are reversed, the result is usually different. Then compute the number of possible secondary crosses, where most of the real results are obtained (as the Waterers have told us.) It will take more than forty maids with forty mops to sweep that job clear in half a century.

I don't seem to be able to stop writing, once you have touched me off on this subject. Probably you can see how important it is that we should not be satisfied when there is far better ahead than anything we now have.

Let me know if I can do anything in return for the pollen you so generously offer.

Sincerely,

G. G. Nearing

ARBORETUM CLASSES

Spring 1971

The College of Forest Resources administers the education program of the University of Washington Arboretum. For further information, call 543-2730. To register, send check (made payable to the University of Washington) to:

Arboretum Courses
286 Bloedel Hall
University of Washington
Seattle, Washington 98105

SPRING TOURS Joseph Witt, Assistant Director of the Arboretum, will conduct tours of the Arboretum grounds in spring bloom. Japanese cherries, rhododendrons and azaleas are some of the attractions in the outstanding plant collections featured. Class limited to 25. Mondays, April 5, 19, May 3, 17, 31; 10-12 noon. 5 sessions, $5.00.

BIRDS OF THE ARBORETUM Mrs. Zella Schultz, noted ornithologist, will conduct a field course in the Arboretum dealing with bird identification and adaptation. Mrs. Schultz has worked with many ornithology groups and is well known for her illustrations in *Birds of Washington.* Class limited to 20. Students should have binoculars. Saturdays, April 24 thru May 15; 9:00-11:00 a.m. 4 sessions, $10.00.

UNION BAY: THE LIFE OF A CITY MARSH Robert Pyle, Nature Interpretation specialist will lead an ecologic and esthetic exploration of the Arboretum waterfront trail and Foster's Island. The class will work toward a broad environmental awareness, including processes of destruction, protection and the ongoing life of the marsh community. Class limited to 30. Saturdays, April 3 thru May 22; 10:00-noon. 8 sessions, $10.00.

NATURE PHOTOGRAPHY Donald Riecks, Director of the University of Washington Audio-Visual Services, will lead this series on outdoor photography. Field and lecture sessions will include discussions on the use of the camera to photograph plant materials under varying conditions of space, season and weather conditions. Class limited to 20. Saturdays, April 17, 24, May 1, 15; 12:30-2:30 p.m. 4 sessions, $12.00.

This is your Arboretum, kept alive by your support

We are pleased to welcome the following new members (December 1, 1970 through February 28, 1971): *Sustaining* —Mrs. L. F. Caverly, Mrs. J. J. Griffin, Mr. & Mrs. B. V. Lemme, E. Loners, Mrs. Dick Wristen Olufs, Mrs. Jack Rensel, Mrs. H. H. Schaelchlin. *Annual*—Mrs. John Aasten, Mrs. Peter M. Baum, Mrs. Irving Bean, Mrs. James C. Bellamy, Mrs. L. W. Bever, Mrs. J. W. Boundy, Mrs. Roland L. Brewer, Mrs. George M. Brown, Mrs. Clarence A. Chase, Mrs. A. W. Collins, Mrs. S. J. Coon, Mrs. James A. Curry, Mr. & Mrs. J. Stanton Frederick, Jr., Mrs. Michael Germann, Mrs. Robert P. Gibbons, William Goodale, Mrs. Robert H. Green, Mrs. Jack L. Greig, Mrs. R. Guiwits, Mrs. L. C. Heath, Mrs. Leslie Hong, Mrs. Gordon Howe, Mrs. Homer W. Humiston, Mrs. Barbara B. Johnson, Mrs. Robert Josephson, Mrs. Jay W. Kane, Mrs. Allen Kelly, Mrs. Ursel Krumme, Thelma V. Larson, Mrs. Mary Lou Ford, Mrs. D. R. McDaniel, Mrs. Willard McGary, Mrs. John E. Means, Mrs. T. G. Mercer, Mrs. R. Boe Messett, Mrs. Lucien Moncini, Mrs. Frank R. Morrison, Mrs. Lloyd Nelson, Mrs. R. B. Nelson, Jr., Fred L. Nilsen, Mrs. Ken Pacquer, Mrs. Joseph Patterson, Mrs. Philip Pearson, Mrs. Donald Peck, Mrs. Martin A. Price, Roberta L. Quinan, Mrs. Norman W. Quinn, Mrs. Robert L. Shantz, Richard M. Skinner, Mrs. John F. Sullivan, Jr., Dr. J. H. Thompson, Mrs. R. E. Tidball, Mrs. George Vance, Mrs. W. G. Viloudaki, Mrs. Ralph Wood, Mrs. Jack C. Woodman.

We are also grateful to the following members who have increased their dues to: *Life*—John A. Blethen. *Supporting*—Miss Kathryn Wilson. *Contributing*—Mrs. Harlan Cavender. *Sustaining*—Mrs. Dan Beebe, Mrs. August Buschmann, Mrs. John Faris Hall, Dr. & Mrs. David Kaminsky, Mrs. Frank Molitor.

SOME OF OUR FAVORITES

Won't You Send Us Yours?

PRUNUS SERRULA "BIRCH BARK CHERRY"

C. EDWARD SIMONS, JR., M.D. *

Selection of an appropriate plant for description in this space should impose certain limitations of choice on the author. Such a plant should be of a suitable size and form for landscape improvement. Hardiness and immunity to pests and diseases are essential qualities. A paramount consideration is the faculty of this plant to sustain interest on a twelve-months basis; a transitory floral display is not enough! It should also be tractable enough for the average reader gardener. Many fine plants in Northwest gardens are thus, *ipso facto,* excluded from consideration.

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*Dr. Simons, a member of the Doundation Board, is also a past President of the Seattle Chapter of the American Rhododendron Society. His Puget Sound garden is a show place of rhododendrons and related plant material.

The polished mahogany bark of *Prunus serrula* is beautiful throughout the year. Photo: Dr. Simons

A superior, but uncommon plant, which meets these rather rigid criteria is *Prunus serrula*. An upright-growing tree in its early years and putting on up to three feet in annual growth, it remains somewhat columnar in outline. The deciduous leaves are narrow and slightly serrate almost willow-like: and of a uniform, deep matte green. The floral display consists of a subdued May shower of small, white cherry blossoms, giving a starry effect; however, the supreme attribute of this tree is the brilliant peeling bark which has the texture and appearance of polished mahogany or perhaps burnished bronze, an appearance sustained throughout the year.

Prunus serrula eventually becomes a standard-size tree. A mature specimen in Cornwall has a trunk diameter of over two feet and is over thirty-five feet tall; however, a ten-year old tree in my garden is five inches through the base and about twenty feet in height. This tree should be accent-sighted near a walk or drive where the beautiful bark and form can be open to frequent observance. It should be underplanted with only ground covers to protect the view of the base. It harmonizes splendidly with near-by rhododendron and camellia and will upgrade almost any landscape effect. No plant in my garden receives more astonished commentary. The most frequent questions are: "What is that?" and "Where can I find one?"

Propagation is on a limited basis in the Puget Sound area and young trees are available through several local nurseries. To date, it has proved completely trouble-free and requires only occasional pruning to shape. It may be grown on a single trunk or as a clump of several stems as the young trees throw up occasional shoots from the base which may be retained or removed according to habit desired. Its origin in the highlands of Western China assures complete hardiness. A real mystery is why *Prunus serrula* has not earlier become popular and widespread in this area of intense gardening.

Lester E. Brandt

Friends of Lester E. Brandt, rhododendron hybridist and enthusiast, will be saddened to know of his recent death. Working since 1940, Mr. Brandt was best known for his efforts to create better plants for Northwest gardens, especially dwarf types. He made many crosses; at one time he had some 50,000 seedlings from which to select. Many of those chosen were registered with the International Rhododendron Authority. His plants were frequent winners of 'Best New Hybrid Awards' at Seattle and Tacoma Rhododendron Shows. Some of them have received awards by the American Rhododendron Society. His own garden-nursery was a joy to visit.

Mr. Brandt was a long time contributor to the Arboretum, making 71 contributions from 1945 to 1966. The list of material is interesting. Besides furnishing the Arboretum with seeds from his rhododendron crosses and plants of his hybrids, the list includes seeds and plants of rhododendron species, *crinodendron, cytisus, leucothoe, enkianthus, tricuspidaria, callistemon, meconopsis, nothofagus* species, *poncirus, primula* and others.

Many of the best of his large collection of rhododendron species and hybrids have been purchased by the Seattle Chapter of the American Rhododendron Society and will form the basis for a special garden in the Seattle area.

D.E.B.

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The Arboretum Answers

J. A. WITT

These questions are representative of those asked of members of the Arboretum staff from time to time throughout the year.

Q. What is the gray-green mossy sort of growth that is invading my deciduous azaleas? Is it harmful to the plants, and if so how can I get rid of it?

A. What you are describing sounds as if it were a lichen, which grows on azaleas and other woody plants especially where they are in a shady moist situation. Most authorities feel they cause no injury to the plant on which they grow, but we have seen some branch die back on azaleas that have a heavy infestation of this lichen. Dr. Arlen Davidson, Extension plant pathologist at the Western Washington Research and Experiment station Puyallup, suggests a dormant spray of tribasic copper sulfate or liquid lime sulfur to control a severe infestation.

Q. My evergreen azalea has a real problem. Some of its leaves have become thick and turned whitish. Will this kill it?

A. No, it isn't a fatal disease. The trouble is azalea leaf gall and, as with many diseases, seems more prevalent in some years than in others. Remove and destroy the infected leaves when you see them. If this doesn't control the difficulty then use a copper spray applied when the new leaves first show, then repeat twice at two-week intervals or until the leaves are fully grown.

Q. I have some rhododendrons in my garden that have been growing fairly well over the past years and still look in very good condition. However, a member of my garden club tells me that I am all wrong in the way I fertilize the plants. What is the best method of feeding rhododendrons?

A. Nearly everyone who grows "rhodies" has his own way of fertilizing them. In the Arboretum we generally give the plants one fertilization in the early spring and keep them well mulched, often with barnyard litter if we have it. Other good growers swear by a spring and after-flowering feeding. I know of commercial growers who fertilize whenever the appearances of the leaves seem to call for it. I feel that if you are getting results that please you, there is no good reason to change. Certainly don't change just because someone said you weren't doing it right.

Q. When is the best time to transplant rhododendrons?

A. It depends somewhat on where you live; if you are in a very cold area planting is best done in the spring after all danger of frost is past. In the Arboretum we do the most of our plantings in March and April and a somewhat lesser amount in October and November. Rhododendrons can be moved when in flower, but are best left alone when the new growth is developing in late spring.

Q. The weather bureau is forecasting a very severe cold spell for the next few days. What do you do to protect your azaleas and rhododendrons?

A. We suffer! Really there is not much we can do in situations like these except to see the plants are in as good condition as we can get them, and hope. In your garden you can often create a shelter of some sort that will protect small plants from the direct sun when they are frozen and keep the brisk winds from drying them out. An adequate mulch will also help to keep the soil from being frozen.

Q. My 'Britannia' has changed color – it used to be red but now its a sort of purple-blue. What's wrong with it?

A. This is a common problem; your 'Britannia' was a grafted plant and the understock, that is, the part which forms the root system of the plant, has taken over. Look at the leaves and I'll bet you can detect a difference between the red flowered scion and the blue flowered understock. Cut out all of the latter you can going to the base of the plant and you will probably get 'Britannia' back.

Q. Can you help me settle an argument? What is the difference between an azalea and a rhododendron?

A. This is both an easy and difficult question to answer. First of all, most modern botanists consider azaleas to be included in the genus *Rhododendron* so there is actually no difference. However, we normally can look at a plant and tell immediately whether it is an azalea or a rhododendron so there are some obvious differences. When we try to formulate these differences, however, we find that there are a number of exceptions and that the two groups really do blend together. For instance, most azaleas are deciduous or semi-evergreen, yet there are evergreen azaleas and deciduous rhododendrons. The stamens usually are five in number in azaleas but may be up to ten; rhododendron stamens number from five to twenty. The ovary of rhododendrons is covered with glands, scales, shortish hairs (tomentose) or is smooth, while the ovary of the azaleas is most often covered with long stiff hairs (setose), though some are smooth (glabrous). Many rhododendrons have their leaves and other parts covered with scales, a condition known as lepidote. No azalea has these scales, and it so happens that most of the rhododendrons which resemble azaleas are scaly. From this you can see why the botanist lumps the two together and calls them all *Rhododendron.*

Q. What's wrong with my large 'Cynthia'; its leaves are all covered with brown spots?

A. It would be foolish to try to diagnose this sort of problem over the 'phone'. The trouble might be a disease, spray damage, frost injury or some physiological condition. There are discussions of leaf spots in most books on rhododendrons, including *Rhododendron Information,* American Rhododendron Society, 1967. We also have a few copies of "Rhododendron and Azalea Diseases" a leaflet published by the Cooperative Extension Service Washington State University, EM 3024, Sept. 1968, available in the office. You probably could also get this from your County Extension Service. You could also bring in a specimen for us to look at, but remember we have no pathologist on our staff.

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UNIT CONVERSATIONS

This spring, the 1500-member unit Council of the Arboretum Foundation once again prepares for its 24th Annual Plant Sale. A wide selection of plants, shrubs and trees will be sold in the Arboretum office parking lot on two consecutive days: Thursday, April 29 from 4:00 to 8:00, and Friday, April 30 from 9:30 to 5:00.

Plant Sale Chairman Mrs. Fred Clarke reports that all of the plants most familiar to Northwest gardeners will be available as well as a tempting array of rare beauties.

Plant offerings will include ferns, fuchsias, herbs, a wide variety of perennials, rockery and ground covers, and house plants in a plethora of sizes and types.

The pre order department, a service which has proven to be a great customer helper in past sales, is offered again this year. Advance orders will be taken until April 15 by Mrs. Roland Pinkham at EA 2-9014, or Mrs. John Sundberg at AD 2-0772, and reserved plants can be picked up on either sale day.

The Plant Sale offers a special opportunity to those who have long admired a certain unique shrub or tree in the Arboretum, but have not been able to find it for sale locally. Available will be many plants grown during the year by Unit members in the Foundation greenhouse from cuttings taken from exquisite Arboretum varieties. Also, some plants will be donated by local nurseries, and some unusual specimens have been bought from specialty nurseries throughout the U.S.

Landscape advisors will be present at the Sale to assist each shopper in finding the best plant selection to suit his specific garden needs.

A comprehensive book department will include much new literature on general gardening techniques in the Northwest, as well as some very specialized works for the more advanced gardener.

Garden Art items will include natural driftwood "Sculpture", wooden bird feeders and small planters, spruce sawdust, moss, garden aprons and much more.

Even eager young gardeners like to shop at the "something-for-everyone" Foundation Plant Sale!
Photo: Joy Spurr

Sprucing up the rambling Arboretum grounds for the popular summer season as well as for the upcoming April Plant Sale is an annual volunteer project of the Arboretum Foundation's 1500-member Unit Council.

Arboretum Work and Fun Day occurs this spring, fittingly, on Arbor Day, Wednesday, April 14, from 9:30 A.M. until dusk.

All garden lovers are invited to participate, and Unit members and other volunteers should report to the Arboretum Foundation offices on the grounds wearing suitable gardening clothing equipped with tools, lunch and a carton for weeds.

For more information regarding Work and Fun Day please contact Chairman Mrs. Dan Beebe at AD 2-1611.

Pink to reddish flowered *Camellia japonica* Te Deum will be among choice plants in the new Camellia Department. Photo: Joy Spurr

Unit 41, recently celebrating its twentieth anniversary, received this letter from one of their early charter members who was unable to attend. They want to share it with us.

Happy Anniversary
to
Frances McBride Unit No. 41

Looking out my window I see an "Elsie Watson" Rhododendron; masses of "Frances McBride" and "Marie Manthey" heathers; "Alice Blackstock" hydrangeas; "Margaret Mulligan" pernettya and cornus canadensis; a "Helen Ogden" hellebore; "Irene Bunker" maidenhair and other woodland treasures. Out another window I see a row of "Marie Manthey" skimmia – how thrilled I was to find nice roots on those cuttings, and sad a couple of years later to find only stubs left by a mountain beaver; the stubs grew, though, and our skimmia is beautiful.

You probably will not recognize these plantings by these "given" names – I remember how comforting it was to find some of our most green-thumbed and successful gardeners didn't use the official names.

The breadth and length of our territory, and variety in age and type of our homes and gardens is fascinating; even after all these years our program chairmen find interesting speakers and places to visit. In earliest times Ruth LaMore and Virginia Rautenberg brought many members from Denny Park and Holmes Point Road; Irene Bunker brought members from Bothell and Moorlands; Mercer Islanders and Bellevuites brought know-how, leadership, wonderful gifts of cuttings and divisions of their plants. Marie Manthey brought basketsful of primroses and cuttings; Frances McBride hostessed a delightful luncheon, a tour of her garden, gifts galore every year.

Through the years I am sure we have had a hundred members. Just think how many gardeners and gardens we have contributed to beautifying the East Side. Best of all think of the friendships we have made with each other.

Your visits, notes, telephone calls and other kindnesses have added much pleasure to us this year.

Mary Eastman

Books for the Rock Gardener*

Books on rock gardens abound, and the literature dates back many years. Since the art of rock gardening developed chiefly in Great Britain, and has reached its greatest perfection there, many of our most valuable current books are written by British authors, and published in London. These books are most useful to rock garden enthusiasts in the Pacific Northwest, where the climate is similar to that of Southern England.

The selection of books on rock gardens given here has been put together in response to frequent queries from readers of the Bulletin who want to learn more about this special form of landscaping. The titles listed are all standard works of recent date, and are quite generally available. These and many other good books on the subject are stocked by the public libraries in our area.

ALPINE GARDENING, by Roy Elliott, Vista Books, London, 1963
The author gives his personal experience with alpine plants in his alpine house and in his garden.

COLLECTOR'S ALPINES: Their Cultivation in Frames and Alpine Houses, by Royton E. Heath, Taplinger, London, 1964
Beautiful black and white photographs of plants illustrate this book which is very thorough in its instructions for pot culture.

DWARF CONIFERS: A Complete Guide, by H. C. Welch, Faber, London, 1966
Very good descriptions of almost every known dwarf and slow growing conifer. There are some excellent close-up identification plates.

FERNS OF THE NORTHWEST, by Theodore C. Frye, Binfords & Mort, Portland, 1956
An excellent field guide with accurate descriptions and line drawings to make identification positive.

THE GARDENER'S FERN BOOK, by F. Gordon Foster, Van Nostrand, Princeton, 1964
Based upon the author's own experiences, this informative book is a basic guide for the beginner as well as a good reference for the more advanced.

GROUND COVER PLANTS, by Donald Wyman, Macmillan, N.Y., 1970
Propagation methods, general cultural information and lists of ground covers for special uses make this a valuable aid. The second half of the book is devoted to an alphabetical listing of ground covers giving all necessary descriptive information.

A GUIDE TO ROCK GARDEN PLANTS, by Anna N. Griffith, Dutton, N.Y., 1965
Very useful as a reference with 1900 plants described, 200 illustrated in color.

THE HEATHER GARDEN, by Fred J. Chapple, Collingridge, London, 1964
A very complete treatment of heathers covering origins, distribution, propagation and planting. There is a good listing of heather varieties, a heather calendar, and a section devoted to closely allied trees and shrubs.

HOW TO PLAN, ESTABLISH & MAINTAIN ROCK GARDENS, by George Schenk, Lane, Menlo Park, Calif., 1964
Practical information is given which is well illustrated. Concise plant descriptions are very helpful.

PACIFIC NORTHWEST FERNS AND THEIR ALLIES, Thomas M. C. Taylor, University of Toronto Press, Canada, 1971.
A comprehensive treatment of pteridophyte flora of the Northwest, this book is arranged in alphabetical order by family, genus and species. This is the definitive book of its kind.

ROCK GARDEN PLANTS OF THE SOUTHERN ALPS, by W. R. Philipson and D. Hearn, Caxton Press, Christchurch, N.Z., 1965
Lavishly illustrated with black and white photographs, this book opens up a whole new world of rock garden plants from New Zealand which hopefully might be adapted to our gardens.

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*This is the first of a series of reading lists which will appear in future issues of the Bulletin. It was compiled by Helen Moodie (Mrs. J. F.) and Ruth Gershevsky (Mrs. Noah).

ROCK GARDENING, by H. Lincoln Foster, Houghton, Boston, 1968

An informative book in two parts; general information on cultivation, propagation and the making of planting sites, and a descriptive catalogue of plants.

ROCK GARDENS: How to plan and plant them: with sections on wall, paved, marsh and water gardens, by Alexander Edwards, 4th edition, Taplinger, London, 1965

Specific plants for specific situations as well as a A.B.C. plant listing. Complete cultural and propagation information is given.

Book Reviews

THE SECRET LIFE OF THE FOREST, by Richard M. Ketchum. American Heritage Press, New York, 1970.

Clarity of style correlated with beauty of format surely make this title one of the distinguished publications of 1970, and of all time. The subtitle reads "Conceived and produced in cooperation with the St. Regis Paper Company," and the idea of the book came from a series of advertisements, commissioned by St. Regis, showing little-known and interesting facts of forest life. Most of the twenty-eight drawings are by Jack Kunz, with some by Rudolf Freund and Bernard Pritchik. The original drawings, superb examples of botanical art, are on permanent loan to the Hunt Botanical Library of Carnegie-Mellon University in Pittsburgh. They are here reproduced in color with explanatory captions equal in clarity to the fine text of the book.

The intricate, intermeshing relationship of man and his whole environment is the theme of the book, with specific facts centered on the familiar-to-all-of-us tree. The chlorophyl cycle which assures us our supply of oxygen is explained; the flow of the tree's nourishment via the root system and the Xylem and Phloem is made manifest by picture and comprehensible by word. The detailed ecological complex of organisms living together is presented to show their related activities. The end result achieved is a deep grasp by the reader of Nature's one, all-encompassing and all-related world.

Richard M. Ketchum, Managing Director of the Book Division of American Heritage Press, is the author of the book. He has previously received a Pulitzer Prize Special Citation for his *American Heritage Picture History of the Civil War,* "a distinguished example of American book publishing." This book is a worthy successor to his previous award winning title.

Bernice Ferrier Smith, Librarian
College of Forest Resources

WYMAN'S GARDENING ENCYCLOPEDIA, by Donald Wyman. Macmillan Co., New York; 1971. (1,222 p., illus., $17.50)

The most obvious recommendation for this book is the name of the author, horticulturist of the Arnold Arboretum for 33 years and now horticulturist emeritus, and the names of well known experts on various plant groups and gardening techniques who are contributing authors.

This book is a complete, up to date reference on all aspects of gardening. Numerous black and white illustrations are augmented by several pages of illustrations in full color. Over 9,500 different plants are described. Also included is information on other significant subjects of interest to gardeners such as cultural methods, garden planning, lists of plants for special purposes, fertilizers, plant diseases, pesticides, soils, pruning, mulches, lawn culture, home greenhouse management, and state trees and flowers. A large map that appears on the inside front and back cover illustrates various hardiness zones in the United States and Canada.

The great mass of information contained is alphabetically arranged by subject, coupled with ample cross references, so that desired information on specific subjects is readily available.

C. Frank Brockman

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